

What is claimed is:

1. A method of forming a barrel for a tampon applicator assembly comprising:

    molding a first portion of the barrel in a first mold part and a second portion of the barrel in a second mold part, said first and second mold parts meeting at a maximum outer dimension of said first portion;

    ejecting the barrel from said first and second mold parts; and

    forming a flared region in an area of said second portion.

2. The method as in claim 1, wherein forming said flared region comprises inserting a first mandrel into said area, said first mandrel having a temperature sufficient to soften said area.

3. The method as in claim 2, further comprising inserting a second mandrel into said area, said second mandrel having a shape corresponding to a desired shape of said flared region.

4. The method as in claim 3, further comprising removing said first mandrel from said area prior to inserting said second mandrel.

5. The method as in claim 3, wherein said first mandrel has a shape corresponding to said desired shape of said flared region.

6. The method as in claim 3, wherein said area receives a temperature from said second mandrel sufficient to set said area.

7. A method of forming a barrel for a tampon applicator assembly comprising:

placing a first mold cavity and a second mold cavity in fluid communication with one another, said first and second mold cavities meeting at a maximum outer dimension of said first mold cavity;

injecting a material into said first and second mold cavities to form the barrel;

ejecting the barrel from said first and second mold cavities; and

forming a flared region in a portion of the barrel ejected from said second mold cavity.

8. The method as in claim 7, wherein forming said flared region comprises heating a first mandrel to an elevated temperature, and inserting said first mandrel in said portion.

9. The method as in claim 8, wherein said elevated temperature is about 210 degrees F to about 230 degrees F.

10. The method as in claim 8, wherein said elevated temperature is about 220 degrees F.

11. The method as in claim 8, further comprising contacting said first mandrel with said portion for about 1 second to about 3 seconds.

12. The method as in claim 11, wherein said first mandrel is contacted with said portion for about 2 seconds.

13. The method as in claim 8, wherein said first mandrel has a shape corresponding to a desired shape of said flared region.

14. The method as in claim 8, further comprising removing said first mandrel from said portion, and inserting a second mandrel in said portion, wherein said second mandrel has a shape corresponding to a desired shape of said flared region.

15. The method as in claim 14, wherein removing said first mandrel and inserting said second mandrel has a dwell time of about 0.5 seconds to about 1.5 seconds.

16. The method as in claim 15, wherein said dwell time is about 1 second.

17. The method as in claim 14, wherein said second mandrel has a reduced temperature.

18. The method as in claim 17, wherein said reduced temperature is about 65 degrees F to about 75 degrees F.

19. The method as in claim 17, wherein said reduced temperature is about 70 degrees F.

20. The method as in claim 14, further comprising contacting said second mandrel with said portion for about 1 second to about 3 seconds.

21. The method as in claim 20, wherein said second mandrel is contacted with said portion for about 2 seconds.

22. A barrel for use with a tampon applicator assembly comprising:

an insertion tip having a plurality of petals;

a main section; and

a finger grip having a first region, a gripping region, and a second region,

wherein said first region intersects with said main section at a first plane having a first outer dimension, said gripping region intersects with said first region and has a second outer dimension, and said second region intersects with said gripping region and has a third outer dimension, said first outer dimension being larger than said second outer dimension and said third outer dimension being larger than said second outer dimension, and

wherein said first outer dimension defines a maximum outer dimension of said barrel.

23. The assembly as in claim 22, wherein said maximum outer dimension is located closer to said finger grip than to said insertion tip.

24. The assembly as in claim 22, wherein said third outer dimension is equal to said first outer dimension.

25. The assembly as in claim 22, wherein said main section has a taper ratio of about 1.07 to about 1.15.

26. The assembly as in claim 22, wherein said insertion tip has a taper ratio of more than about 0.66.

27. The assembly as in claim 22, wherein said plurality of petals have a petal length-to-width ratio of about 2 to about 3.